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AUTHOR Mahoney, Kevin J.
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ABSTRACT

Analysis of data from 13 planned new communities, 13 control communities, and two retirement communities indicates that a highly effective model for predicting service preferences can be constructed using per capita income, age, sex and community type. This model limits itself to data available to all planned organizations and suggests that, although the elderly are a diverse population, there may be basic needs. Furthermore, the findings suggest a reexamination of the traditional "problem" focus of services. (Author)

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THE ELDERLY AND VALUED COMMUNITY SERVICES: A PREDICTIVE MODEL[1,2]

Kevin J. Mahoney, MSW[3]

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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3. Kevin J. Mahoney is a doctoral student in Social Welfare at the University of Wisconsin-Madison, and a trainee with the National Institute of Aging and the Faye McBeath Institute on Aging and Adult Life.

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THE ELDERLY AND VALUED COMMUNITY SERVICES: A PREDICTIVE MODEL

In a world with limited resources, what community services do the elderly value? Can knowledge of per capita income, age, sex, and the type of community in which the elderly live help social planners predict the types of services and facilities older people prefer and, more, are willing to spend money on? Answers to these questions could help community planners as they construct new communities, locate public housing, or build up services in existing neighborhoods. Data on per capita income, age and sex distributions, and type of community are normally readily available to the planner. Moreover, use of those data honor the notion that our nation's elderly are a heterogeneous population.

Whereas there will continue to be some difficulty in separating developmental from historical preferences, variables chosen for this study promise to confront future preferences. For example, as the incomes of older Americans increase, will there be different service and facility preferences?...The number and percentage of the "old-old" will be increasing in our society. Will this lead to a demand for different services? Also the ratio of women to men continues to grow. Have we paid enough attention to women's choices? ...Can the individual's selection of a particular type of community to live in account for most of the differences in service and facility preferences? If so, social planners could put much more emphasis on creating a range of community environments for the aged of the future, such as retirement communities and new communities for mixed age groups.

This particular study sets out to test a service preference model appropriate for planners both now and in the future. Data for the research were gathered by the University of North Carolina in an examination of 13

planfully designed new communities[4] (e.g., Columbia, Maryland; Irvine, California and Reston, Virginia), 13 control communities, and 2 retirement communities. Six hundred and eighty-one persons, aged fifty-five and over, comprised this sample. The mean age was 65. 52.11% of the sample was drawn from 13 new communities, 25.91% of the sample came from less planned control communities (control was exercised on age of the community, geographic location and climate, housing mix in the community, plus a number of other factors), and 21.97% of the survey sample lived in age-homogeneous retirement communities. The subjects include a group of mobile, "high resource" elderly with a mean family income of $15,713. Two sets of "yes" or "no" questions were used to generate the dependent variables. The first question asked, "Which three of these facilities (listed below) would you most prefer to have in your neighborhood, that is, within one-half mile of your home?" The second question asked, "Would you be willing to pay more in taxes or assessments to help pay for the facilities or services listed below?" In all, there were 25 types of services included in the dependent variables. (The University of North Carolina survey did not include questions on mental health, legal, and various other social services. This places a limitation on the interpretations which can be made on service preferences.)

Four types of statistical tools were used in analyzing these data:

1) Simple Contingency Tables. - To get frequency counts on all variables and at the same time test for independence between the valued services and the four independent variables (i.e., per capita income, age, sex, and community type).

2) Multiple Regression Techniques and Analysis of Covariance. - Despite the fact that the dependent variables were dummy variables, this proved to be

a good first step in analyzing the data. Leo Goodman (1972) has shown that if the split in the dependent variables is worse than 75-25, the least squares approach is not completely reliable because of the heteroscedasticity.

3) Probit Analysis. - This log linear program is designed to deal with dummy dependent variables without requiring the assumption of homoscedasticity. It gives the probabilities that the dependent variable will equal 1.

4) Randomized Groups and Multiple Regression Analysis. - As a final step, the sample was randomly divided into twenty groups and means for all of the variables were taken in each group. Then, by making use of the Central Limits Theorem, we were able to perform multiple regression analysis on a normally distributed sample. Although the sample was small, statistical significance was more likely to mean substantive importance.

Two special methodological issues deserve further comment:

1) This research considers a number of dependent variables separately because each is of individual importance to the social planner. Still this raises the problem of the repeated t test or rising alpha level. With full awareness of this problem only those results which were confirmed in at least two of the modes of analysis are reported. An α level of .05 is used. As R. A. Fisher (1935) suggested, when the R squared proved to be significant, the individual t tests were then performed.

2) The data gathered by the Center for Urban and Regional Studies of the University of North Carolina can be generalized on a national scale, but only for the populations involved. Any interpretation going beyond new communities, their controls, and retirement communities is suspect.

Past research can give us some guidance. In a study of 1,750 middle to high income elderly in southern California, Hamovitch and Peterson (1969)

found that the respondents believed shopping and laundry facilities, and medical personnel were the most important services to have located nearby. M. Powell Lawton (1969), studying supportive services in the context of the housing environment, observed that medical services are valued above all others. The literature also assists us in developing some predictions on how each of the independent variables will affect the value placed on different types of services and facilities.

Regnier and Gelwicks (1975) report that among high income California elderly, mandatory supportive services and physically taxing activities, including active recreational services, received the least support, while security, public transportation, convenient retail stores and health services were the most favored (in that order). The general image of a hypothetical housing development was presented to the person being interviewed, and the respondent asked to indicate whether he/she must have, might like (but does not consider necessary), or would not want these services included in the prototypical facility.

Leon Robertson, M.D. (1967), in an article dealing with all age groups, entitled, "Race, Status, and Medical Care," concluded that the higher the income, the more likely the person was to have a private physician and the less likely to use or to favor a hospital clinic. Also Bultena and Wood (1970) found that income was positively, but weakly, associated with participation in numbers of different recreational programs, but partial correlations showed income had no independent effect when controlling for age, education, and perceived health. Overall from these readings we might surmise that as income rises, the preferences for private medical facilities, public safety services and

cultural activities will also rise, and conversely, the demand for public health clinics will fall.

In regard to age as a predictor variable, a review of the disengagement literature does suggest that increasing age will be associated with a lessening preference for recreational services and participation, and will produce a greater need for health services.

Very little research has been done on sex differences and service choices. We do know that older women show consistently higher rates of morbidity, and average one more doctor visit per year than older men. We could then predict that women will rate health services more highly. Furthermore, Levine and Preston (1970) in "Community Resource Orientation Among Low Income Groups," concluded that, in general, women were more pro-social and had a higher orientation toward community social services than men.

In recent years much attention has focused on the double standard of aging and the compounding role of sex on age (Sommers, 1974; Sontag, 1972). This literature would lead one to believe that sex role stereotypes are still strong among the elderly. Men would be expected to prefer the active recreational facilities and women to favor retail stores and more supportive services.

Finally, the literature gives strong indications on how the different community types might affect the value placed on services and facilities. Bultena and Wood (1970) state that for the residents in the retirement communities included in their research, card playing, swimming, and walking were the most popular activities. These authors found a strong difference between retirement communities and home communities on orientation to leisure pursuits. They reasoned: 1) Retirement communities provide a group of age peers whose orientations toward leisure are compatible and who collectively constitute a

reference group which legitimizes behavior that might be defined as improper or excessive in other settings. Residents are insulated from norms which tend to be inconsistent with their personal leisure orientations toward retirement; 2) Age density permits the development of programs which generally hold only limited appeal for the aged population; and 3) The age-grading and status-grading in these communities produces a relatively homogeneous population and thereby enhances the likelihood of residents developing friendships.

On the other hand, when we look at new communities, two published goals are the support of individuality and choice, and the fostering of new and creative experiences in an integrated community environment (Minnesota Experimental City Progress Report, May, 1969). This leads us to hypothesize that individuals who elect to live in new communities put more emphasis on individual and cultural facilities such as libraries, theatres, and quiet places to be alone than on group recreational activities.

Analysis of Findings

A short interpretation of the findings, following each of the major divisions of data presentation, is included.

I. General Findings

Frequency distributions provide a general characterization of the preferences of the survey sample. It is quickly evident from Table 1 that regardless of community settings, the particular services most preferred are supermarkets and libraries. In general terms, the strongest demand is for retail and commercial enterprises, and quiet recreational and cultural activities. Public transportation and police protection are the strongest candidates for personal expenditure.

Table 1 about here

Since respondents consistently placed highest priority on personal enrichment, growth opportunities and "normal" developmental services, the findings suggest a re-examination of the traditional "problem" focus of services for the elderly. The data imply that social services and information and referral, for example, might be more effective for the elderly if tied in with libraries and retail stores.

These general results draw attention to the recommendations made by the 1971 White House Conference on Aging Technical Committee on Planning. "The vast majority of programs, services and facilities affecting or potentially of value to older persons are operated by 'generic' private and public organizations that serve human beings of all ages. The objectives of planning in aging become clear. They are to make these generic organizations more sensitive to the needs of the aging." (Binstock, 1971, p. 3)

II. Basic Universal Needs

Analysis of data indicates a highly effective model for predicting service preferences can be constructed using per capita income, age, sex, and type of community. However, there are a few key situations where the model has little or no predictive power.

Table 2 about here

An analysis of service preferences in Table 2 reveals that the model is not helpful when applied to convenience commercial and retail establishments. The elderly in this sample, regardless of age, sex, income, and community type, show a somewhat random, but very strong, preference for these enterprises. The same holds true for quiet places to walk and sit. Convenient retail stores and quiet places to walk and sit seem to be basic universal needs. Therefore, even if no data are available, social planners should consider these facilities as part of a minimum environmental opportunity package for the elderly.

On the other hand, no pattern can be discerned on preference for public health clinics, perhaps because none of the communities surveyed had a public health clinic and overall the demand for this facility was relatively low. This may underline the desire of these elderly to avoid the stigma of services for problem groups since a great majority of the respondents did have health insurance. Or, it may simply indicate a lack of knowledge about what a public health clinic is.

In another service area, the model did not predict willingness to spend more tax money on low-income housing. The most that can be said is that very few of the respondents consider this a worthwhile service. Forty-three percent of the retired white families with incomes under $5,000 and 53 percent of the retired black families in this income range thought that their neighborhoods would be harmed greatly if public housing (for all age groups) was located within one-half mile of their homes.

III. Effects of Per Capita Income

On the whole, the study group had much higher incomes than the national norm. Only 18% of those 65 and over had family incomes under $5,000. The median 1972 family income (for those over 65) was $10,994; the mean income was $15,713. The mean family per capita income was $8,392. (Here we excluded the 134 respondents who failed to answer this question.) We have used the per capita figure since cross tabulations indicated this variable was slightly more significant than gross family income.

Table 3 about here

The important information to be gleaned from Table 3 is that as income rises, the person progressively is more interested in preserving health, preserving his property from fire, and furthering personal growth. Not only does this highlight interest in the "preserving" aspect, but it suggests that as a person achieves financial independence, these are the priority service areas.

IV. Effects of Age

This study included persons fifty-five and over, as there is growing interest in those who are approaching retirement, and in understanding the process by which a person is socially defined as an older person.

Table 4 about here

Table 4 shows that age is positively related to a preference for nearby bus stops and supermarkets. This provides a mild confirmation of the Lawton-Nahemow docility hypothesis. As persons become older they become more dependent on their immediate environment to meet basic daily needs. Proximity of a major food store and access to transportation take on new importance with advancing age.

On the other hand, as expected, preference for active recreational activities declines. (This may be because of health.) There is also a general tendency (in the data) for older persons to be less willing to expend more tax money on any facilities or services. The model cannot predict whether future generations of older people will have the same predilection.

A surprising finding is that in these communities increased age is not significantly related to preference for the health services, but of course most of these people have relocated, with the resources that that implies, and there are only 79 respondents over 75 years of age.

V. Effects of Sex

Table 5 about here

Great care needs to be taken in interpreting sex as a predictor variable. Although attitudes may be changing, data described in Table 5 confirm the existence of sex-role stereotypes. Women are more likely to prefer shopping, library, and transportation services. They are also willing to spend more on public health. Men prefer recreational activities and gasoline stations. Of

the sample, 55.93% were women and 44.07% were men. As the ratio of women to men increases, this whole area will deserve further attention.

VI. Effects of Community Type

There are significant differences among the communities, even when controlling for age, sex, and per capita income. The needs and desires of older people are diverse enough to warrant the continued support of many different kinds of living arrangements.

Tables 6 and 7 about here

The results presented in Tables 6 and 7 are among the most important findings in this study. First, new communities, as opposed to control and retirement communities, have attracted a populace significantly different in their desire for libraries and other individual and creative services. Many of the residents of new communities commute outside the community for doctor's visits and grocery shopping. They have no special preference for having these facilities close to their homes. In fact, many of these new community respondents have retained their old home town physicians. They are willing to submit to inconvenience to maintain long-held relationships. This finding has direct relevance for social planners in new communities. Decentralization of private medical clinics and supermarkets may not be necessary or appropriate.

The strongest desire of retirement community residents seems to be for health facilities. Not only do they prefer a private medical clinic in their neighborhoods, but they are willing to spend more money to get this service.

As Bultena and Wood (1970) predicted, these age-homogeneous communities are somewhat insulated from societal norms which tend to be inconsistent with their personal orientations toward retirement. The results imply that retirement communities are self-contained living centers. Residents don't seem to be especially interested in having transportation out of their communities. They are interested in having nearby health services and active recreational opportunities, e.g., bowling. Retirement community residents do not want to spend more money on recreation, but they are already spending a considerable amount.

VII. Health Services

The model developed in this paper proved especially useful in predicting the value older people would place on recreational and leisure activities such as billiard parlors, tennis courts, and libraries. It was also very helpful in the area of transportation preferences. But nowhere was it as important as in projecting the choice of health services. Table 8 describes the most effective and efficient models for predicting the preference for health services. It is hoped that providing the actual beta weights or paths will be a useful shortcut for social planners who are currently involved in developing health resources. These data are transposed to make the collective of older people the unit of analysis (note statistical method 4). One implication of this model is that demand for services is very elastic. Ceteris paribus, an increase of one standard unit in average per capita income leads to probability increases of .607 and .417 in the preference for private medical clinics and the willingness to spend more money on public health services respectively.

Table 8 about here

Conclusion

Analysis of the data indicates that a highly effective model for predicting service preferences can be constructed using per capita income, age, sex, and community type. This model limits itself to data available to all planning organizations and has utility for existing communities, as well as new communities. Within the model, per capita income and community type were especially potent factors. Importantly, the model discriminated among those elderly giving priority to cultural and leisure, health, transportation and public safety. The model suggests that the aged have diverse preferences, except in the area of basic needs. Regardless of income, age, sex or community type, the elderly value quiet places to walk and sit and convenient retail stores. Furthermore, our analysis suggests that services should be redesigned and offered as enrichment rather than problem-solving.

It is strongly recommended that this study be replicated so as to extend its value to other community types and to further chart the effects of sex on valued services and facilities. Future censuses may provide data on other variables which could well be introduced into the model. (Kendig and Warren, 1976). This model needs to be applied to a list of services which includes more of the "problem-oriented" types to see if there is confirmation of results and if elaboration of the model can be achieved.

TABLE 1

SERVICE PREFERENCES	expressed in %	WILLINGNESS TO SPEND MORE ON	expressed in %
Active Recreation		Recreation	
billiard parlor	2.57		10.01
bowling alley	7.41		
outdoor swimming pool	13.51		
tennis courts	3.90		
Quieter Recreation and Cultural			
indoor movie theater	9.80		
library	28.99		
picnic area	6.19		
quiet place to walk and sit	26.57		
Health		Public Health	12.11
private medical clinic	20.87		
public health clinic	7.38		
Transportation		Public Transportation	21.50
bus stop	18.90	Public Safety	
gasoline service station	15.18	fire	12.11
		police	17.56
Commercial and Retail Enterprises		Miscellaneous	
convenience store	13.49	schools	12.08
drug store	24.60	low-income housing	4.04
laundromat	6.29	maintenance	6.46
post office sub-station	25.31		
supermarket	38.43		

TABLE 2

Cases Where Model Has No Predictive Power

convenience store
drug store
post office substation
laundromat

quiet place to walk and sit

public health clinic

willingness to spend more taxes on low-income housing

TABLE 3

Cases Where Per Capita Income Was a Significant Factor

Positive Relation (the higher the income, the more likely)	Negative Relation (the lower the income, the more likely)
prefers private medical clinic	prefers a bus stop
willing to spend more money on public health	prefers a billiard parlor
willing to spend more money on fire protection	
prefers libraries	
prefers tennis courts	

TABLE 4

Cases Where Age Was a Significant Factor

Positive Relation (the older the more likely	Negative Relation (the younger the more likely
prefers a bus stop	prefers a bowling alley
prefers a supermarket	prefers tennis courts
	willing to spend more money on recreation
	willing to spend more money on public health
	willing to spend more money on fire protection

TABLE 5

Cases Where Sex Was a Significant Factor

Women favor	Men favor
prefer a bus stop	prefer a billiards parlor
willingness to spend more money on transportation	
prefer a supermarket	prefer tennis courts
prefer a library	
willingness to spend more money on public health	prefer a gasoline service station

TABLE 6

Cases Where the New Community Was Significantly Different From Other Communities

Positive Relation	Negative Relation
prefer library	willing to spend more money on recreation
	prefer private medical clinic
	prefer supermarket

TABLE 7

Cases Where the Retirement Community Was Significantly Different From Other Communities

Positive Relation	Negative Relation
prefer a bowling alley	prefer a gasoline service station
prefer private medical clinic	prefer a bus station
willing to spend more money on public health	willing to spend more money on public transportation
	willing to spend more money on recreation

TABLE 8

The probability of the willingness of older people to spend more money on public health services i.e., probability y = 1 = (.417) average per capita income + (-.374) proportion of males in the community

$R^2 = .299$

The probability of older people preferring a private medical clinic nearby = (.607) average per capita income + (.540) percentage of people in retirement communities + (.329) average age

$R^2 = .505$

4. The 13 new communities were selected from a list prepared by the Department of Housing and Urban Development in 1969. Three criteria were used in sampling communities from this list. First, a community had to have a projected population of at least 20,000. Second, there had to be at least 5,000 people living in the community as of January 1973. And, third, the community had to be planned for a cross-section of the population.

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